N2LED Series Emergency Luminaires

Non-Metallic Emergency Egress Lighting Systems with Remote or Direct Mounted Lamps.

NEC/CEC:
  Class I, Division 2, Groups A, B, C, D
  Class I, Zone 2, Group IIC
  NEMA Type 4X
  IP66
 *Marine Outside Type (Salt Water)*

Applications

- Enclosed and gasketed, non-metallic emergency lighting system suitable for use in areas where flammable gases or vapors may become present due to abnormal, unusual or accidental conditions defined by NEC as Class I, Division 2, Groups A, B, C and D and Class I, Zone 2, Group IIC.
- Typical applications include manufacturing plants, refineries, petrochemical and chemical plants, waste and sewerage treatment facilities, food processing facilities, and other industrial manufacturing or process facilities subject to wet or corrosive conditions.
- Non-hazardous areas where dirt, dust or corrosion would reduce life of ordinary emergency lighting systems.

Features

- Enclosures are raintight and suited for operation in highly corrosive and wet locations.
- The electronics consist of a solid-state charger, transfer circuit and low voltage battery disconnect circuit.
- The integrated, illuminated push to test button is mounted on the system housing using a neoprene O-ring gasket to seal out moisture and liquids.
- Capacity is sufficient for the connection of 6 output watts (maximum).
- System supports 4 light heads (at 1.5 Watts each) in any main/remote combination utilizing up to 6 Watts of output power.
  — This allows for a main unit without any light heads to drive up to 4 remote units or any other combination of 4 lights.
- Provides 100% lumen output for 90 minutes of operation with four light heads or 180 minutes of operation with two light heads.
- The solid-state charger maintains battery at full charge
- Upon power failure or utility voltage (AC) below 50 V, the DC emergency lighting load is connected to the battery.
- During emergency operation, the battery is automatically protected from deep discharge damage by a low-voltage battery disconnect (LVD) circuit.
- Upon restoration of normal power, the charger brings the battery to full capacity within acceptable UL time standards (typically within 24 hours).
- Integrated, illuminated push to test button:
  — Indicates presence of AC line voltage and system error codes
  — Activates push to test function
- A universal input circuit allows operation from 120 to 277 Vac, 50/60 Hz lines.
- Maintenance-free NiCd battery is suited for harsh temperature environments of 0 °C to +55 °C (+32 to +131 °F).
- Remote lamp head assemblies (one or two) are available for mounting of lamp heads away from main power supply system.
- An automatic test feature provides periodic self-test of the system functions every 30 days.
- Status indicator light allows easy monitoring of system status and failure modes.

Standard Materials

- Lighting system:
  — Body: fiberglass reinforced polyester
  — Cover gasket: continuous silicone
  — Push to test switch: fiberglass reinforced polyester (FRP), neoprene gaskets
  — Hub: nickel plated brass
  — Cover screws: stainless steel
  — Lampheads: aluminum
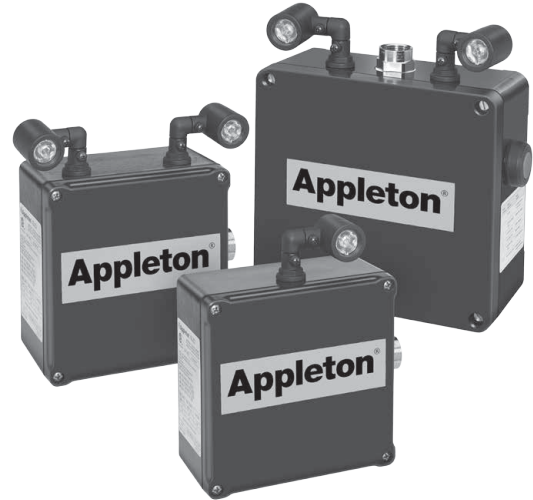
- Remote unit:
  — Body: fiberglass reinforced polyester (FRP); specially formulated with low resistivity, will not hold static charge
  — Cover screws: stainless steel
  — Gasket: neoprene gasket

NEC/CEC Certifications and Compliances

- UL Standards:
  — 1598A (Supplemental Requirements for Luminaires for Installation on Marine Vessels)
  — 924 (Emergency Lighting and Power Equipment)
  — 844 (Electric Luminaires Hazardous Locations)
- CSA Standards:
  — C22.2 No. 141-M1985 unit equipment for emergency lighting
  — C22.2 No. 137-M1981 non-incendive electrical equipment for use in Class I, Division 2 hazardous locations
- Life Safety Code NFPA101® – Section 5-9 (Emergency Lighting)
- Marine wet locations suitability, Type 4X
- cCSAus Certified: 2715744

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NEC/CEC:
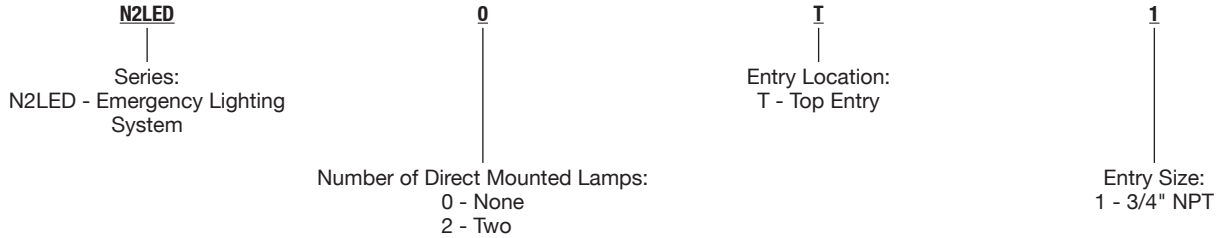*Class I, Division 2, Groups A, B, C, D*
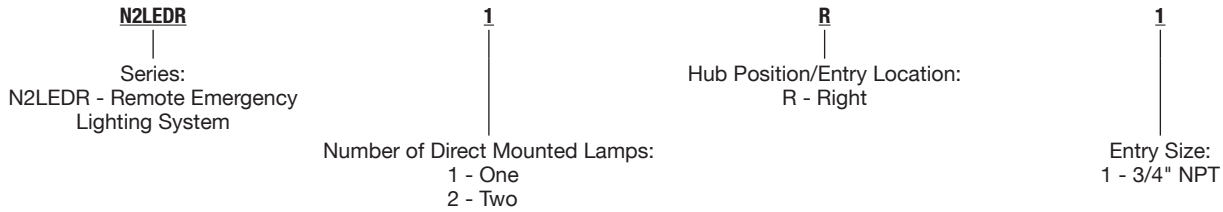*Class I, Zone 2, Group IIC*
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Order using catalog numbering guide below or select catalog number from tables on following pages.

Catalog Numbering Guide For N2LED Master Units

| N2LED | 0 | T | 1 |

N2LED
Series:
N2LED - Emergency Lighting
System

0
Number of Direct Mounted Lamps:
0 - None
2 - Two

T
Entry Location:
T - Top Entry

1
Entry Size:
1 - 3/4" NPT

Catalog Numbering Guide For N2LED Remote Units

| N2LEDR | 1 | R | 1 |

N2LEDR
Series:
N2LEDR - Remote Emergency
Lighting System

1
Number of Direct Mounted Lamps:
1 - One
2 - Two

R
Hub Position/Entry Location:
R - Right

1
Entry Size:
1 - 3/4" NPT

Thermal Performance — Operating Temperatures

Wire Supply	Ambient Temperature	"T" Number
60 °C (140 °F)	0 °C to +55 °C (+32 °F to +131 °F).	T6

"T" Numbers Represent the Maximum Lamp Temperature for Class I, Division 2 Locations

"T" Number	T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
Temp Range (°C)	351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	85
Temp. Range (°F)	664-842	619-662	574-617	538-572	502-536	448-500	421-446	394-419	358-392	331-356	322-329	277-320	250-275	214-248	187-212	185

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Lamp Comparison Chart

Number of LED Lamps	Input Power	Lumens	CRI	Lamp Life (Hours)	Color Temp CCT
1	1.256 Watts	131.0	70	50,000+	5000K
2	2.513 Watts	257.8	70	50,000+	5000K

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Number of LED Lamps	Base Orientation	Input Voltage Vdc	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
1	Up	2.9	437.0	1.256	1.000	131.0	104.3
2	Up	2.9	874.0	2.513	1.000	257.8	102.6

Note: Drive remote unit lamphead(s) only from the N2LED master unit

Wire Sizing For Remote Installations
For copper wire, maximum distance (feet) between power supply and remote unit to limit voltage drop to 5%.

Wire Gage	Maximum Wire Length m (ft)
18 AWG	23.8 (78)
16 AWG	38.1 (125)
14 AWG	60.4 (198)
12 AWG	96.0 (315)
10 AWG	152.4 (500)

System Status

Status Indication	Status Description	Status Definition
	No light	AC power removed from circuit
*	Continuous red steady light	Battery fully charged
* * _ _	Red light blinks once every second	Battery charging
** ** _ _	Red light blinks twice repeatedly	Battery failure
*** *** _ _	Red light blinks three times repeatedly	LED lamp head failure
****_ ****_	Red light blinks four times repeatedly	Emergency circuit charger board failure

LED/AREA: NEC/CEC EMERGENCY

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Main System

	Number of LED Lamps	Total Watts of LED Lamps	Hub Size	Input Voltage	Frequency	Weight kg (lb)	Catalog Number
Emergency Lighting System With Two Direct Mount Lamps							
	2	3	3/4"	120-277	50/60 Hz	3.27 (7.2)	**N2LED2T1**
Emergency Lighting System Without Direct Mount Lamps							
	—	—	3/4"	120-277	50/60 Hz	3.04 (6.7)	**N2LED0T1**

Remote System

	Number of LED Lamps	Total Watts of LED Lamps	Hub Size	Hub Position	Weight kg (lb)	Catalog Number
Remote Mount With One Lamp						
	1	1.5	3/4"	Dead End Hub on Right	1.45 (3.2)	**N2LEDR1R1**
Remote Mount With Two Lamps						
	2	3	3/4"	Dead End Hub on Right	1.59 (3.5)	**N2LEDR2R1**

Replacement Parts

Description	Catalog Number
Emergency Lamp Kit	**N2LEDLH**
Emergency Battery Pack Kit	**N2LEDBP**
Emergency Circuit Charger Board Kit	**N2LEDCB**
Nickel Plated Brass M25 Male, 3/4" NPT Female Hub	**737DM3T25**

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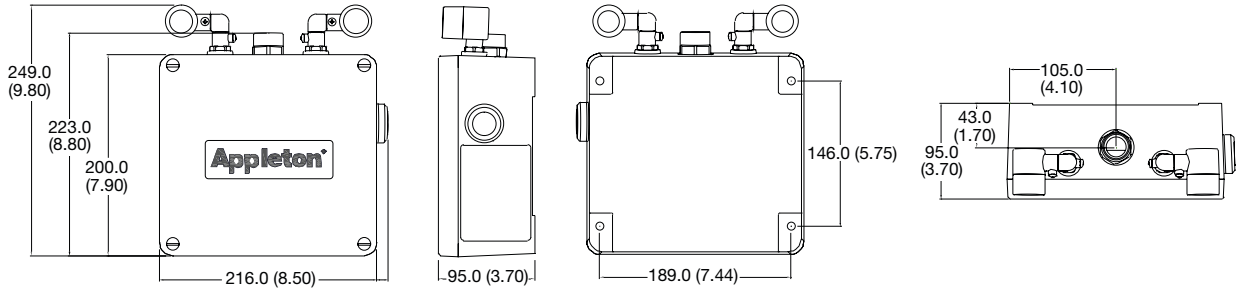 *Class I, Division 2, Groups A, B, C, D*
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Dimensions in Millimeters (Inches)

Emergency Lighting System With Two Direct Mount Lamps

249.0 (9.80)
223.0 (8.80)
200.0 (7.90)
216.0 (8.50)
95.0 (3.70)
146.0 (5.75)
189.0 (7.44)
105.0 (4.10)
43.0 (1.70)
95.0 (3.70)

Adjustment Angle — Top View

125° 125°
125° 125°
125° 125°
125° 125°

Side View

110° 110°

Emergency Lighting System Without Direct Mount Lamps

23.0 (0.90)
200.0 (7.90)
216.0 (8.50)
12.0 (0.50)
95.0 (3.70)
146.0 (5.75)
189.0 (7.44)
105.0 (4.10)
43.0 (1.70)
95.0 (3.70)

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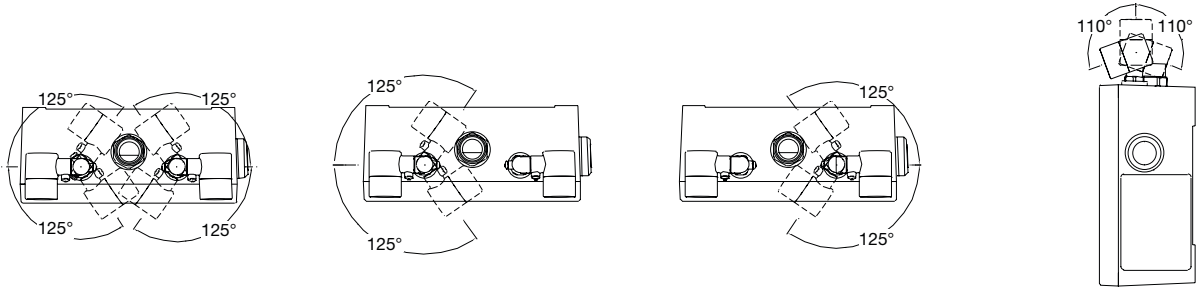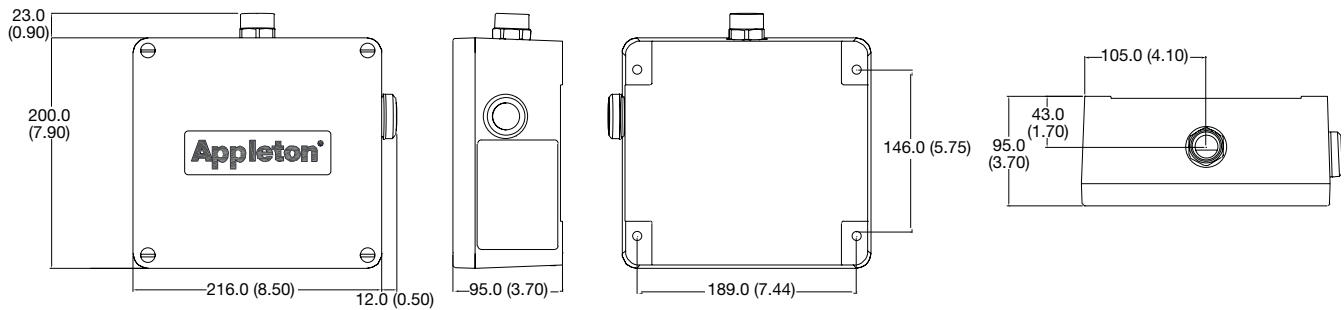*NEMA Type 4X*
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Dimensions in Millimeters (Inches)

Remote Mount With One Lamp
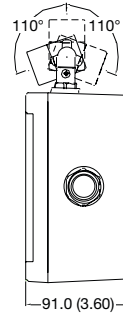
219.0 (8.60)
170.0 (6.70)
85.0 (3.30)
170.0 (6.70)
23.0 (0.90)
91.0 (3.0)
153.0 (6.02)
131.0 (5.16)
91.0 (3.60)
40.0 (1.60)

Adjustment Angle — Top View

180°
180°

Side View

110° 110°
91.0 (3.60)

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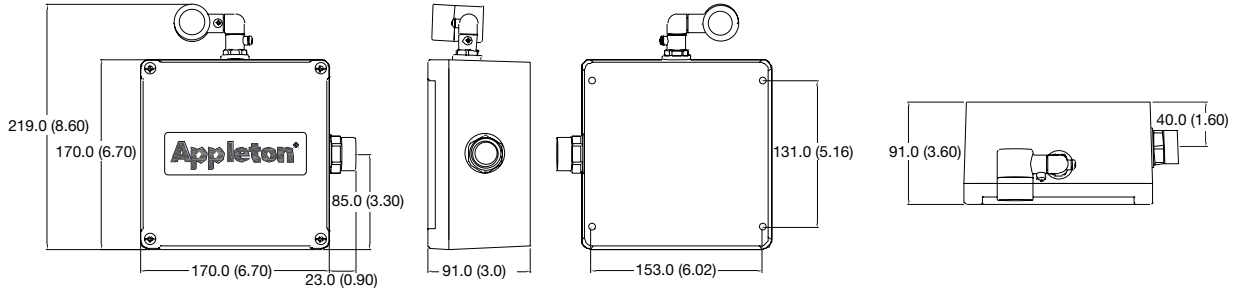# N2LED Series Emergency Luminaires

Enclosed and Gasketed

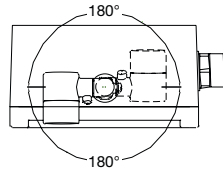Non-Metallic Emergency Egress Lighting Systems with Remote or Direct Mounted Lamps.

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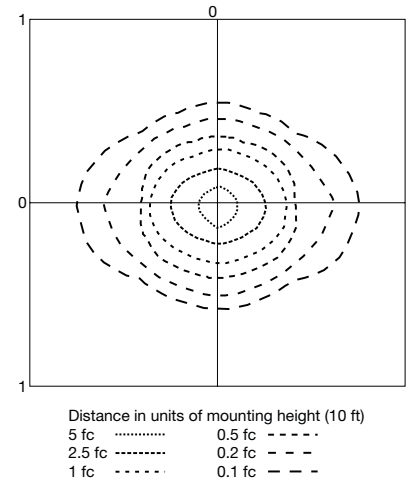 *NEMA Type 4X*
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Photometric Data — DATA SHOWN IS ABSOLUTE

MODEL: N2LED, Wall Mount LED Emergency Luminaire, Single Lamp

Candela Distribution

	0.0	22.5	45.0	67.5	90.0
0	663	663	663	663	663
5	603	569	547	540	527
10	377	350	370	394	391
15	188	172	202	249	255
20	86	80	97	123	119
25	36	34	42	41	46
30	15	14	16	30	36
35	6	6	9	20	25
40	3	3	6	11	14
45	2	2	4	5	3
50	2	2	3	2	2
55	2	2	2	2	2
60	1	1	1	1	1
65	0	0	1	1	1
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	117.9	90.0
0-40	125.5	95.8
0-60	130.2	99.4
60-90	0.8	0.6
0-90	131.0	100.0
90-180	0.0	0.0
0-180	131.0	100.0

Distance in units of mounting height (10 ft)
5 fc ·············
2.5 fc ----------
1 fc · - · - · -
0.5 fc - - - - -
0.2 fc - - - -
0.1 fc - - - -

MODEL: N2LED, Wall Mount LED Emergency Luminaire, Two Lamp

Candela Distribution

	0.0	22.5	45.0	67.5	90.0
0	1241	1241	1241	1241	1241
5	1196	1110	1049	1011	989
10	844	764	761	763	737
15	469	426	461	506	486
20	225	206	239	264	234
25	93	87	107	91	97
30	40	37	40	66	74
35	17	16	23	44	51
40	7	7	14	26	28
45	4	5	8	11	6
50	4	4	6	5	4
55	4	4	5	4	3
60	2	2	3	3	2
65	1	1	2	2	1
70	0	1	1	1	1
75	0	0	0	1	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	230.9	89.6
0-40	246.7	95.7
0-60	255.9	99.3
60-90	1.8	0.7
0-90	257.8	100.0
90-180	0.0	0.0
0-180	257.8	100.0

Distance in units of mounting height (10 ft)
10 fc ——
5 fc ·············
2.5 fc ----------
1 fc · - · - · -
0.5 fc - - - - -
0.2 fc - - - -
0.1 fc - - - -

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